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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,301	01/30/2004	Wilfred Toups JR.		4989

7590 12/15/2004

WILFRED TOUPS
5790 WEST MYRTLE ST.
ORANGE, TX 77630

EXAMINER	
MAYO, TARA L	

ART UNIT	PAPER NUMBER
3671	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.	Applicant(s)	
10/767,301	TOUPS ET AL.	
Examiner	Art Unit	
Tara L. Mayo	3671	

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

TITLE: Coastal land reclamation and erosion prevention system.
INVENTOR: Richard D. Stanley and Wilfred Toups
REFERENCES SITED: U.S. PATENT DOCUMENTS

5,011,327	4/1991	Thiac
5,178,489	1/1993	Suhayda
5,370,475	12/1994	LeBlanc
5,645,371	7/1997	Marzullo
5,820,295	10/1998	Buteaux
6,213,687	4/2001	Broughton et al.
6,375,387	4/2002	Gabor et al.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH AND DEVELOPMENT:

No U.S. federal funds have been acquired or used in the research and development of this invention.

Attached: 5 ILLUSTRATIONS OF THE INVENTION

BACKGROUND OF INVENTION

The referenced prior art patents that are related to this application are concerned with the reduction of erosive effects of water on land areas and describe the functionality of using vehicle tires, or portions of tires, to form various structural designs that have the capability of altering the way hydrodynamic forces act on coastal areas. They describe the loss of land mass and the need to prevent these losses. The structures, presented by the referenced prior art, are anchored to the seabed with a variety of anchoring devices, attached to pilings that allow pivotal movement not conducive to soil retention, or are deployed in a widely scattered array that depends on its coverage mass for its positional stability. In the case of Thiac, Patent #5,011,327, the patented structure uses tires cut in half and bolted together leaving one side open. In the case of Marzullo, Patent #5,645,371, the structures allow the possible accretion area to empty and fill with the tidal action which negates the accumulation process. In the case of Suhayda, Patent #5,178,489, the various structures sited sit on the seabed or are suspended on piling. Each of these forms allows the captured sediment to washout under and between the columns. In the case of LeBlanc, Patent #5,370,475, the area blanketed by the tire structure has a very limited area to allow reclaimed soil to accumulate. The blanketing design becomes massive when built to a height effective for reclamation and would create a large site unusable for recreational purposes as well as being an eyesore to the area.

BRIEF SUMMARY OF THE INVENTION

The basic concept of this proposed invention is to provide a practical and

economical system to reclaim land that has been lost to the erosion process and ensure that it remains stable after reclamation. Additionally, this system is upgradeable and can be modified at any time to increase its effective area. The research on vehicle tires that were naturally filled with their surrounding medium of sand, silt or mud, has shown that the tire had a virtual neutral buoyancy and a density that closely matched that of the medium in which it was located. Because of this characteristic, the tires anchored the medium while still being flexible enough to track with the overall medium movement generated by wave, current and tidal actions. With this knowledge, it was possible to engineer and deploy a structure capable of restraining the shoreside sediment that accumulated to the height of the structure. An overlapping interlocking tire structure provides the necessary strength and, by burying the bottom section of the structure during the initial deployment, it becomes self anchoring and prevents seabed currents from undercutting the structure. Additional anchoring is used in coastal beach areas where severe storm wave and tidal actions would be encountered. The structure accepts extensions both vertically and horizontally to increase the area of reclamation as well as adapting to variations or obstructions in the terrain. The systems capability of being installed in phases minimizes any negative effects to both beach access and landscape appearance.

DETAILED DESCRIPTION OF THE INVENTION

The invention uses vehicle tires that have unbroken tread and sidewall areas, ensuring that the tire is capable of retaining a filler material when the inner opening of the tire is closed and sealed using a strong tape or screws. A purposely cut 4 inch opening is made on one side of the tire and a slurry sand/soil fill is injected. The opening is closed and sealed using either a strong tape or with screws. Filled tires are laid flat in a single continuous straight line with the tread areas touching. The tires are secured to each other with a corrosion resistant strapping such as stainless steel that encircles the area of contact. The layer of tires formed by this process becomes one of several layers that forms the invention structure. The tire layers are stacked vertically atop the initial bottom layer in an interlocking offset fashion where the strapped tire unions of alternate layers align vertically. Alternate layers are then vertically strapped together at the outer extremities on both sides of the structure as depicted in Illustration 1. The structure is completed to the desired height and installed in a continuous open trench that extends the full length of the proposed reclamation area. The trench will have been excavated to a depth of three (3) feet to provide sufficient positional anchorage for the tire structure base as well as being at a depth unaffected by the natural seabed currents that would wash out under the structure. Screw type anchors are installed on the shore side of the structure at thirty (30) foot intervals. The anchors connect near the top of the structure and are deployed at a forty five (45) degree angle to a point below the bottom of the structure. Additional anchors are deployed on the sea side of the

structure in coastal areas having more severe weather conditions.

Illustration No.1
A view of the system's structure, from shore side, depicting the multiple layers and the vertical strapping style to make the structure rugged. The strapping is of a corrosion resistant material, such as stainless steel, with a crimp type fasteners for ease of installation. The structure is placed in the installation ditch and the lower layers are submerged in the local soil medium. The three (3) foot screw type anchors are deployed and attached to the structure. There is no limit to the horizontal distance to which the structure could be extended. The structure can be increased vertically by stacking and strapping additional layers atop the previously installed structure.

Illustration No. 2
An end view of a basic system structure as it would appear deployed in the installation ditch. The location depicted in this illustration is of a coastal beach type and would be extended vertically as shore side beach accretion occurred. Anchors, in this instance, are shown on both the shore as well as the sea side of the structure. This application would be used in a locale that is prone to severe weather and the resultant wind, water and tidal effects.

Illustration No. 3
This view illustrates the use of twin structures that promotes the reclamation of a larger area in a shorter amount of time. These structures also retain dredged backfill in the case where immediate use was necessary.

Illustration No. 4
The process of filling the tires is accomplished by first closing the inner tire access area with screws as in Detail A, Tire #1, or with a durable and strong tape as in Detail B, Tire #3. A temporary access is cut in the sidewall area to allow a slurry of soil medium to be injected and the access closed with screws (Tire #2) or a strong tape (Tire #4). The tires are then strapped to each other in a continuous chain to form the individual layers.

Illustration No. 5
The filled tires are positioned side by side with tread areas touching and strapped to form the continuous chain layer. As the layer is generated to an accepted distance, additional layers may be started atop the previous layer and continue the process of forming the overall structure as depicted in Illustration No. 1.

CLAIMS

1. It is claimed that deployment of the structure in this invention will reclaim soil or sand of coastal areas using the natural action of the area's water and wind to capture the medium moved by the elements.

2. It is further claimed that deployment of the structure in this invention will prevent erosion of the area of its deployment by providing a stable protective barrier against the prevailing elements.

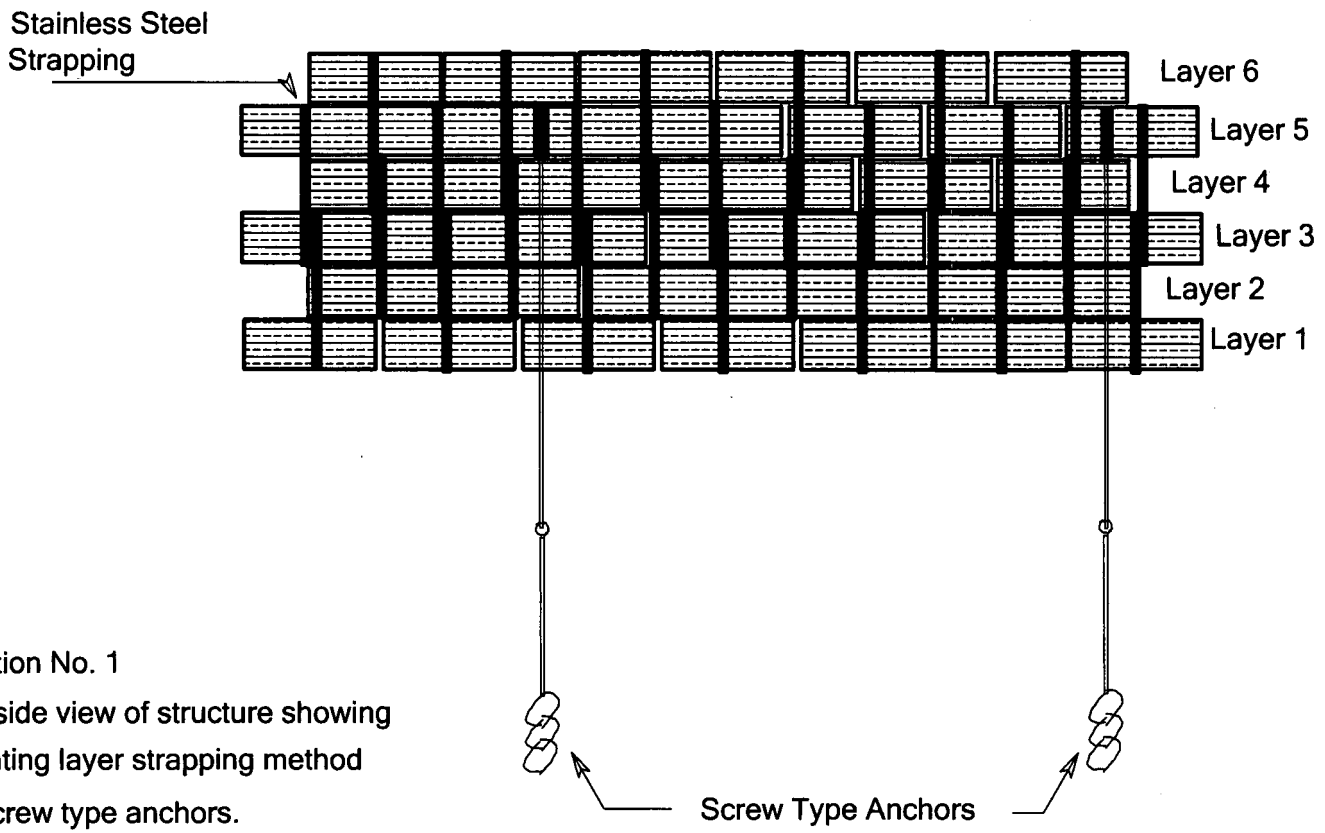

Illustration No. 1
Shore side view of structure showing alternating layer strapping method with screw type anchors.

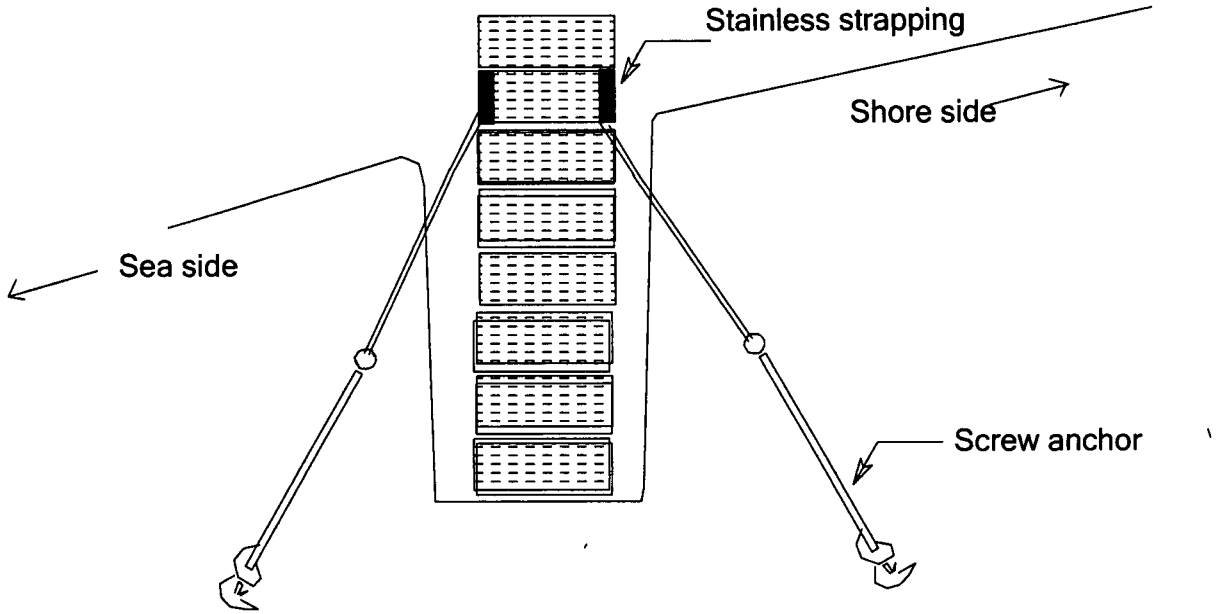

Illustration No. 2

End view of structure place in the installation ditch parallel to the shoreline.

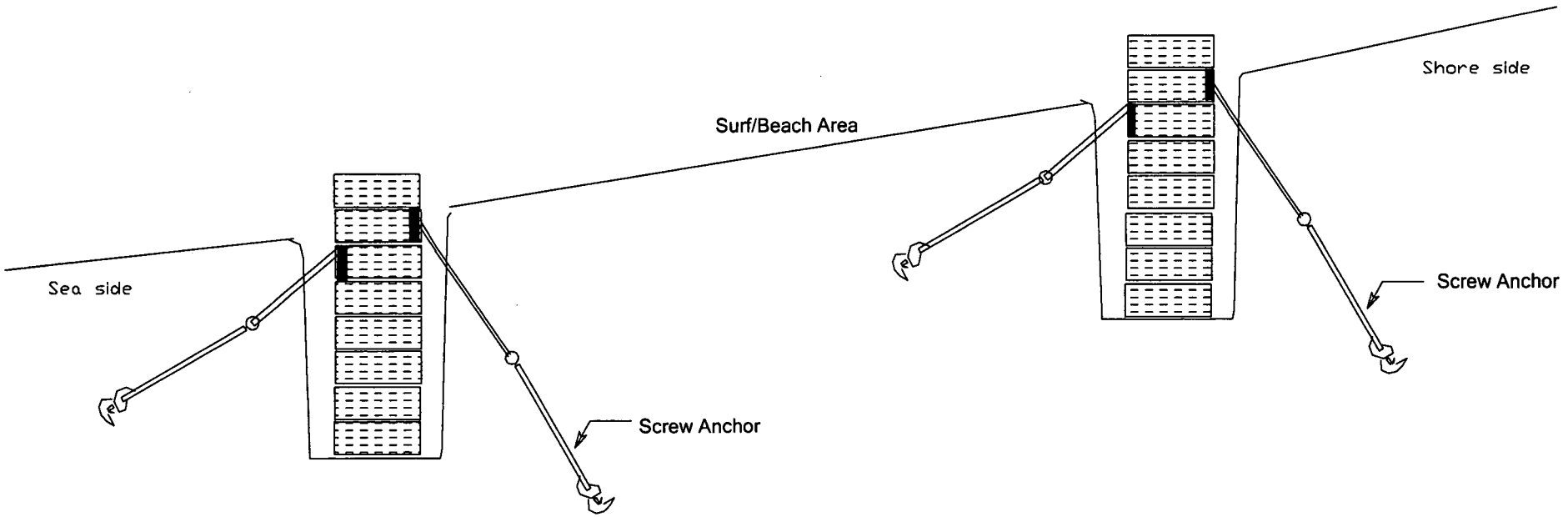

Illustration No. 3

End view of twin structures placed in seperate installation ditches.

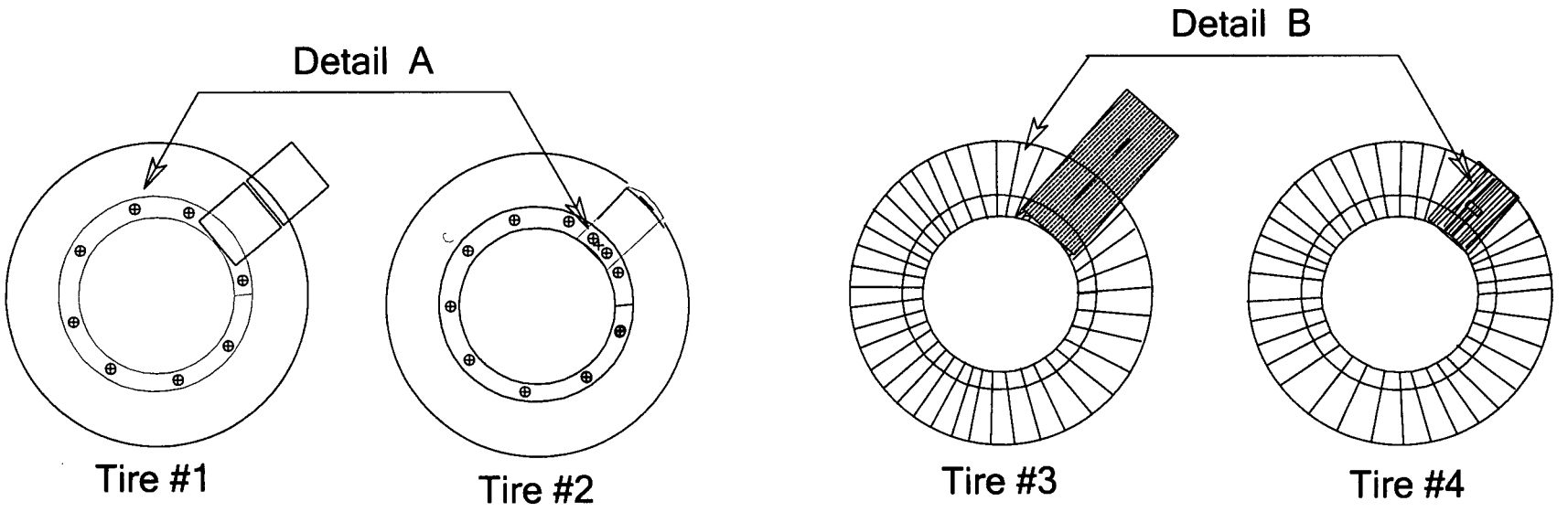

Illustration No. 4

Detail A depicting screw fasteners to seal tires.
Detail B depicting tape wrapping to seal tires.

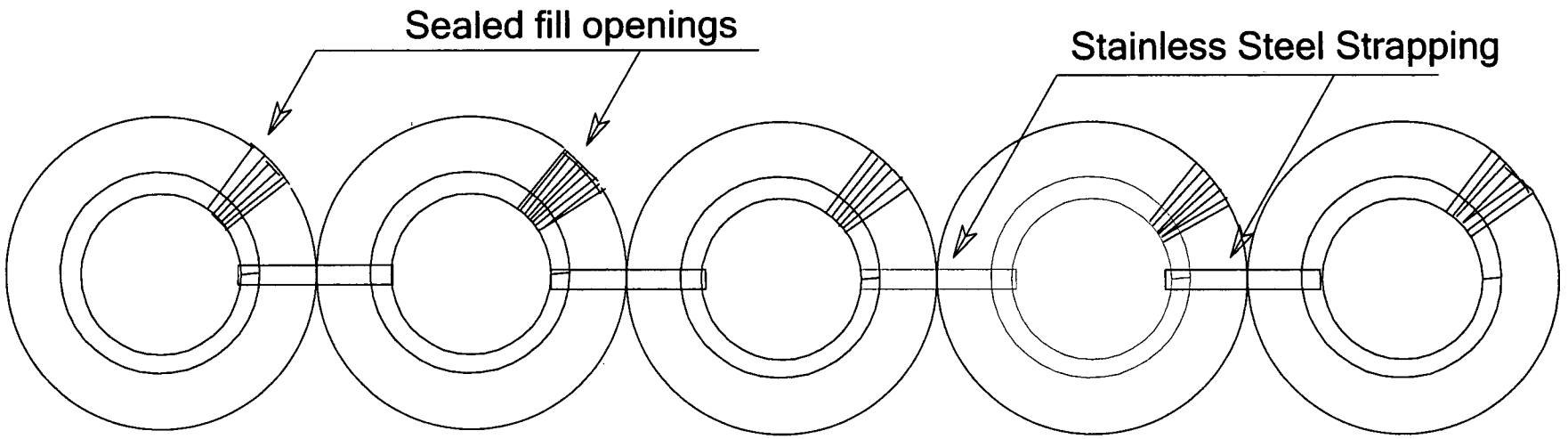

Illustration No. 5
Partial tire layer with tires
sealed and strapped.

ABSTRACT

The invention's structure consists of layered vehicle tires connected both vertically and horizontally to form a continuous barrier structure. The tires are pre-filled with an aggregate matching the medium at the installation site and sealed to retain the fill. This pre-fill generates a neutral buoyancy. The tires are laid flat horizontally with the tread areas touching and formed into a continuous straight row by strapping one to the next with a corrosion resistant material equivalent to stainless steel banding. Successive layers are fabricated and placed atop the initial layer in an offset manner which places the strapped unions directly over the tire center openings of the next lower layer. Strapping is applied vertically between alternate layers and layers are added to reach the desired height of the overall structure. The subsequent structure is installed in a prepared three (3) foot trench running parallel to the coast line. Screw type anchors are attached at thirty (30) foot intervals to assist in stabilizing the structure. The structure is constructed at a height that permits the incoming wave and tidal action to carry sand/soil over the structure and, by slowing the retreating water, the particulate will be deposited and accumulated on the coast side of the structure.